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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : H. NOMURA et al.

Group Art Unit: 2851

Appl. No. : 09/774,111

Examiner: Not Yet Assigned

Filed : January 31, 2001

For : LENS BARRIER OPENING/CLOSING DEVICE OF A MOVABLE LENS
BARREL

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to an examination of the above-identified patent application, the Examiner respectfully requested to amend the specification and claims, as follows:

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IN THE SPECIFICATION

Please amend the specification as follows (a marked-up copy is attached at the end of this document):

Page 65, lines 5-24, delete in their entirety and substitute the following therefor:

---Specifically, in the present embodiment of the lens barrier opening/closing device, the upper front barrier blade 27c1 of the front pair of barrier blades 27c and the upper rear barrier blade 27d1 of the rear pair of barrier blades 27d are pivoted at corresponding one of

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the two pivots 27g, the lower front barrier blade 27c2 of the front pair of barrier blades 27c and the lower rear barrier blade 27d2 of the rear pair of barrier blades 27d are pivoted at the other pivot 27g, and the rear pair of barrier blades 27d are constantly biased to rotate in directions to close the photographic aperture 27a of the panel (front end wall) 27b by the two torsion springs 27e, respectively, which are arranged on opposite sides of the rear pair of barrier blades 27d in a radial direction. Due to this structure, since the barrier drive ring 26 is biased by the two torsion springs 27e in the direction opposite to the biasing direction of the two helical extension springs 28, two helical extension springs 28 are required to bias the barrier drive ring 26 with a large biasing force relative to the biasing force of the two torsion springs 27e.---

IN THE CLAIMS

Please amend claim 1 as follows (a marked-up copy of claim 1 is attached at the end of this document):

1. (Amended - Clean Copy) A lens barrier opening/closing device of a movable lens barrel driven to move between an accommodation position and a photographing position, comprising:

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at least one barrier blade which is driven to open and close a photographic aperture formed at the front end wall of said movable lens barrel when said movable lens barrel is in said photographing position and said accommodation position, respectively;

a barrier drive ring driven to rotate about an optical axis to drive said at least one barrier blade;

a first biasing device which biases said barrier drive ring in a predetermined rotational direction;

a rotational barrel which at least rotates about said optical axis when said movable lens barrel moves between said accommodation position and said photographing position;

a rotational-force receiving surface formed on said barrier drive ring, said rotational-force receiving surface extending parallel to said optical axis; and

a rotational-force transmission surface formed on said rotational barrel, said rotational-force transmission surface extending parallel to said optical axis,

wherein said rotational-force receiving surface and said rotational-force transmission surface are engaged with each other to rotate said barrier drive ring together with said rotational barrel about said optical axis in a direction against a biasing force of said first biasing device when said movable lens barrel moves from one of said photographing position and said accommodation position to the other of said photographing position and said accommodation position.

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REMARKS

The Examiner is respectfully requested to enter the foregoing amendment prior to examination of the above-identified patent application.

The amendments to the claims made in this amendment have not been made to overcome the prior art, and thus, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should there be any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
H. NOMURA et al.

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MARKED-UP COPY OF SPECIFICATION

Specifically, in the present embodiment of the lens barrier opening/closing device, the upper front barrier blade 27c1 of the front pair of barrier blades 27c and the upper rear barrier blade 27d1 of the rear pair of barrier blades 27d are pivoted at corresponding one of the two pivots 27g, the lower front barrier blade 27c2 of the front pair of barrier blades 27c and the lower rear barrier blade 27d2 of the rear pair of barrier blades 27d are pivoted at the other pivot 27g, and the rear pair of barrier blades 27d are constantly biased to rotate in directions to close the photographic aperture 27a of the panel (front end wall) 27b by the two torsion springs 27e, respectively, which are arranged on opposite sides of the rear pair of barrier blades 27d in a radial direction. Due to this structure, since the barrier drive ring 26 is biased by the two torsion springs 27e in the direction opposite to the biasing direction of the two helical extension springs 28, [the barrier drive rings 26 is] two helical extension springs 28 are required to bias the barrier drive ring 26 with a large biasing force relative to the biasing force of the two torsion springs 27e.

MARKED-UP COPY OF CLAIM 1

1. (Amended) A lens barrier opening/closing device of a movable lens barrel driven to move between an accommodation position and a photographing position, comprising:

at least one barrier blade which is driven to open and close a photographic aperture formed at the front end wall of said movable lens barrel when said movable lens barrel is in said photographing position and said accommodation position, respectively;

a barrier drive ring driven to rotate about an optical axis to drive said at least one barrier blade;

a first biasing device which biases said barrier drive ring in a predetermined rotational direction;

a rotational barrel which at least rotates about said optical axis when said movable lens barrel moves between said accommodation position and said photographing position;

a rotational-force receiving surface formed on said barrier drive ring, said rotational-force receiving surface extending parallel to said optical axis; and

a rotational-force transmission surface formed on said rotational barrel, said rotational-force transmission surface extending parallel to said optical axis,

wherein said rotational-force receiving surface and said rotational-force transmission surface are engaged with each other to rotate said barrier drive ring together with said rotational barrel about said optical axis in a direction against a biasing force of said first

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biasing device when said movable lens barrel moves from one of said photographing position and said accommodation position to the other of said photographing position and said accommodation position.